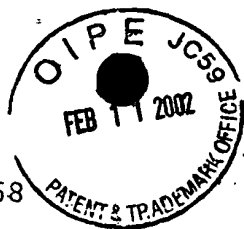


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<110> Hoechst Marion Roussel

<120> MATURE PROTEIN HAVING ANTAGONIST ACTIVITY AGAINST BONE
MORPHOGENETIC PROTEIN.

<130> JH98K011 PCT SEQUENCES IN ENGLISH

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<150> 10-288103

<151> 1998-10-09

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<301> MAKISHIMA, Fusoa
TAKAMATSU, Hiroyuki
MIKI, Hideo
KAWAI, Shinji
KIMURA, Michio
MATSUMOTO, Tomoaki
KATSUURA, Mieko
ENOMOTO, Koichi

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SATOH, Yusuke

<302> Novel protein and process for producing the same.

<310> WO 96/33215

<312> 1996-1-0-24

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Gly Leu Cys Glu Phe Pro Leu Arg Ser His Leu Glu Pro Thr Asn His
50 55 60

Ala Val Ile Gln Thr Leu Met Asn Ser Met Asp Pro Glu Ser Thr Pro
65 70 75 80

Pro Thr Cys Cys Val Pro Thr Arg Leu Ser Pro Ile Ser Ile Leu Phe
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<301> WANG, Elizabeth A.
      WOZNEY, John M.
      ROSEN, Vicki A.
<302> Novel osteoinductive compositions.
<310> WO 88/00205
<312> 1988-01-14
<313> 1 TO 114
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<301> WOZNEY, John M.
ROSEN, Vicki
CELESTE, Anthony J.
MITSOCK, Lisa M.
WHITTERS, Matthew J.
KRIZ, Ronald W.
HEWICK, Rodney M.
WANG, Elizabeth A.

<302> Novel regulators of bone formation molecular clones
and activities.

<303> Science

<304> 242

<305> 4885

<306> 1528-1534

<307> 1988-12-16

<308> Genbank/M22490

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Arg Arg His Ser Leu Tyr Val Asp Phe Ser Asp Val Gly Trp Asn Asp
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Trp Ile Val Ala Pro Pro Gly Tyr Gln Ala Phe Tyr Cys His Gly Asp
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Cys Pro Phe Pro Leu Ala Asp His Leu Asn Ser Thr Asn His Ala Ile
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Val Gln Thr Leu Val Asn Ser Val Asn Ser Ser 71 e Pro Lys Ala Cys
65 70 75 80
Cys Val Pro Thr Glu Leu Ser Ala Ile Ser Met Leu Tyr Leu Asp Glu
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<301> OZKAYNAK, Engin

RUEGER, David C.

DRIER, Eric A.

CORBETT, Clare

RIDGE, Richard J.

SAMPATH, Kuber T.

OPPERMANN, Hermann

<302> OP-1 cDNA encodes an osteogenic protein in the TGF-beta family.

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PCT/IB99/01621

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| Pro | Leu | Ala | Thr | Arg | Gln | Gly | Lys | Arg | Pro | Ser | Lys | Asn | Leu | Lys | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Ser | Arg | Lys | Ala | Leu | His | Val | Asn | Phe | Lys | Asp | Met | Gly | Trp |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asp | Trp | Ile | Ile | Ala | Pro | Leu | Glu | Tyr | Glu | Ala | Phe | His | Cys | Glu |
| | | 35 | | | | | 40 | | | | | 45 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Cys | Glu | Phe | Pro | Leu | Arg | Ser | His | Leu | Glu | Pro | Thr | Asn | His |
| | 50 | | | | | 55 | | | | | 60 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Ile | Gln | Thr | Leu | Met | Asn | Ser | Met | Asp | Pro | Glu | Ser | Thr | Pro |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Cys | Cys | Val | Pro | Thr | Arg | Leu | Ser | Pro | Ile | Ser | Ile | Leu | Phe |
| | | | | 85 | | | | | 90 | | | | | 95 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Ser | Ala | Asn | Asn | Val | Val | Tyr | Lys | Gln | Tyr | Glu | Asp | Met | Val |
| | | | 100 | | | | | 105 | | | | | 110 | | |

| | | | | | | |
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